

**CARGILL**  
**SALT DIVISION**

7220 Central Ave.  
Newark, CA 94560-4206  
510/797-1820 1-800-321-1458  
Fax: 510/790-8189

April 15, 1995

Mr. Steve Ritchie  
CA Regional Water Quality Control Board  
S.F. Bay Region  
2101 Webster Street  
Suite 500  
Oakland, CA 94612

ATTENTION: Lila Tang

CALIFORNIA REGIONAL WATER  
APR 17 1995  
QUALITY CONTROL BOARD

Dear Mr. Ritchie:

Please find attached the self-monitoring report for the NPDES Permit No. CA0028690 for our Redwood City facility wet weather discharge of rainwater from our salt crystallizer beds.

Discharge of rainwater from the crystallizer beds occurred March 10, 1995 to March 27, 1995. Approximately 329 acre feet of water was discharged to the First Slough in Redwood City. The field samples taken showed a range of Baume readings from 2.9-3.9 and a pH range of 8.2-8.5. The laboratory measurement of TDS was 30,000 ppm.

Slightly elevated levels of nickel and lead were found during this sampling period. Nickel was found at a concentration of 0.019 mg/l exceeding the limit of 0.0071 mg/l. Lead was found at a concentration of 0.0084 mg/l exceeding the limit of 0.0056 mg/l. We are continuing to investigate this issue, yet we are not sure what the cause of the elevated levels could be. This water is simply rainwater that falls on our crystallizer beds. We are willing to work with the RWQCB to resolve this matter.

"I certify under penalty of law that this document and all attachments are prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations [40 CFR 122.22(d)]"

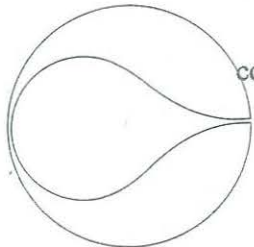
Sincerely,



Barbara N. Ransom  
Environmental Manager

*Elevated Ni and Pb in  
SW discharge.*

cc: U.S. Environmental Protection Agency



7713 7125

## b. COMPLIANCE EVALUATION SUMMARY

### Effluent Limitations

1. The discharge of Waste No. 1 containing constituents in excess of the following limits is prohibited:

<u>Constituents</u>	<u>Units</u>	<u>Maximum</u>	<u>Results</u>
Total Dissolved Solids	mg/l	32,000	2.9-3.9 Be in field 30,000 ppm in Laboratory
Biochemical Oxygen Demand Five day	mg/l	20	<5 mg/l
Arsenic	µg/l	20	<0.004 mg/l
Cadmium	µg/l	10	<0.001 mg/l
Chromium (VI) <sup>a</sup>	µg/l	11	0.010 mg/l total chromium
Copper	µg/l	20	0.019 mg/l
Lead	µg/l	5.6	0.0084 mg/l
Mercury	µg/l	1	<0.0002 mg/l
Nickel	µg/l	7.1	0.018 mg/l
Silver	µg/l	2.3	<0.001 mg/l
Zinc	µg/l	58	0.033 mg/l

<sup>a</sup> The Discharger may meet this limit as total chromium

### Results

2. Waste No. 1 shall not have a pH less than 6.5 nor greater than 8.5 Ranged between  
pH 8.2-8.5\* (field)
3. The survival of test fishes of the species *Menidia beryllina* or silverside minnow is a 96 hour static bioassay of the discharge of Waste No. 1 shall be a median of 90 percent survival and a 90 percentile value of not less than 70 percent survival.

Results: The results from the acute toxicity bioassay using *Menidia beryllina* as the test indicator species indicates that there was 95% survival in the 100% effluent sample after 96 hours.

\* The pH was read in the field throughout the discharge period. On two occasions the pH read 8.7 and 8.8. The discharge was immediately stopped and did not resume until pH was within limits.

APPENDIX C. MAP

CARGILL SALT

REDWOOD CITY

REDWOOD CITY

SF2

CARGILL SALT

REDWOOD CITY FACILITY

CRYSTALLIZER RAINWATER DISCHARGE

9A DISCHARGE LOCATION:

FIRST SLOUGH

Belle Haven

Brine M

9

4 M

9

6

5

10

## APPENDIX D.

### LABORATORY DATA

**REPORT OF ACUTE BIOMONITORING TEST  
RAINWATER DISCHARGE FROM CRYSTALIZERS  
COLLECTED 10 MARCH, 1995**

**REDWOOD CITY FACILITY**

**Prepared for**

**Cargill Salt Company  
7220 Central Avenue  
Newark, CA 94560**

**Prepared by**

**S.R. Hansen & Associates  
4085 Nelson Ave, Suite I  
Concord, Ca. 94520**

**28 MARCH, 1995**

## **1. INTRODUCTION**

Beginning in February, 1992, S.R. Hansen & Associates began conducting static acute toxicity tests for the Cargill Salt Company in Newark, California as part of the compliance monitoring mandated in the facility's NPDES permit. This report describes the procedures used and the results obtained for acute toxicity tests and chemical analyses performed on a sample of Rainwater Discharged from the Crystallizers at the Redwood City facility between 09 - 10 March, 1995.

## 2. MATERIALS AND METHODS

**Sample Collection** - A 24-hr. composite sample of Rainwater Discharge from the Crystallizers at the Redwood City facility was collected by Cargill Salt Company staff on 09 - 10 March, 1995. The sample was stored in a pre-cleaned 2.5 gallon cubitainer, packed in an ice chest, and maintained at 4°C for transport to the S.R. Hansen & Associates (SRH&A) laboratory via SRH&A courier on 10 March, 1995. Toxicity tests were initiated on 11 March, 1995 (due to the availability of the test organisms).

**Test Organisms** - Acute bioassays were performed using *Menidia beryllina*. The *Menidia* were obtained from an outside supplier (Aquatic Indicators, St. Augustine, FL).

**Toxicity Test Procedures** - *Menidia beryllina* (10 days old) were obtained from Aquatic Indicators (St. Augustine, FL.) and were held in a five gallon aquarium prior to use in the tests. The animals were exposed to the effluent for a period of 96 hours under static, (renewal at 48 hours) conditions. The test was performed at a salinity of 29 ppt. One-liter beakers were used for the exposures, with a total volume of 500 ml of effluent sample added to each beaker. Arrowhead Spring Water (salinity adjusted to 29 ppt using artificial sea salts, Tropic Marin) was used as the control and diluent. Ten fish were placed into each container, and each exposure was run in duplicate. Temperature, dissolved oxygen, pH, electrical conductivity, salinity, and number of dead organisms were recorded daily in each exposure.

**Chemical Test Procedures** - Representative aliquots of the effluent were sent to Curtis & Tompkins, LTD (Berkeley, CA) and Quanterra Environmental Services (Sacramento, CA) for analyses. The sample that was to be analysed for metals was preserved with ultra-pure (Ultrex) nitric acid while the total dissolved solids and BOD samples remained unpreserved. Both samples were refrigerated to 4°C and shipped in a cooler with frozen blue ice to the contract labs via SRH&A and overnight couriers.



### **3. RESULTS**

The results of the acute toxicity tests and chemical analyses performed on the 09 March, 1995 Rainwater Discharge from the Redwood City Crystallizers are presented in Tables 1 and 2, respectively and can be summarized as follows:

#### **3.1 ACUTE BIOASSAY TEST**

The results from the acute toxicity bioassay using *Menidia beryllina* as the test indicator species indicates that there was 95% survival in the 100% effluent sample after 96 hours (Table 3-1). It should be noted that the 80% survival in the control treatments failed to meet the required 90% minimum for test acceptability.

#### **3.2 CHEMICAL ANALYSES**

Chemical analyses of the effluent sample that was discharged from the crystallizer between 09 - 10 March, 1995 indicate that five (5) of the metals that were analyzed (i.e., chromium, copper, lead, nickel, and zinc) and Total Dissolved Solids (TDS) were present in detectable concentrations (Table 3-2).

**TABLE 3-1. RESULTS OF 96-HR *MENIDIA BERYLLINA* BIOASSAY ON  
RAINWATER DISCHARGE FROM THE CARGILL SALT COMPANY  
REDWOOD CITY FACILITY CRYSTALIZERS  
(COLLECTED 09-10 MARCH, 1995)**

Concentration (% Effluent)	% Survival		AVERAGE
	Replicate A	Replicate B	
100	100	90	95
50	80	100	90
25	90	80	85
10	90	70	80
5	80	80	80
Control	90	70	80

**TABLE 3-2. RESULTS OF CHEMICAL ANALYSES PERFORMED ON  
RAINWATER DISCHARGE FROM THE CARGILL SALT COMPANY  
REDWOOD CITY FACILITY CRYSTALIZERS  
(COLLECTED 09-10 MARCH, 1995)**

ANALYSIS	CONCENTRATION (mg/L)	DISCHARGE LIMIT (mg/L)
Total Dissolved Solids (EPA 160.1)	30,000	32,000
BOD (EPA 405.1)	<5.0	20
Arsenic (Method 6020-M)	<0.004	0.020
Cadmium (Method 6020-M)	<0.001	0.010
Chromium (Method 6020-M)	0.010	0.011
Copper (Method 6020-M)	0.019	0.020
Lead (Method 6020-M)	0.0084*	0.0056
Mercury (Method 245.1)	<0.00020	0.001
Nickel (Method 6020-M)	0.018*	0.0071
Silver (Method 6020-M)	<0.001	0.0023
Zinc (Method 6020-M)	0.033	0.058

\* - Exceeds discharge limit

#### **4. CONCLUSIONS**

The results of the the tests performed on the sample that that was discharged from the crystallizers at the Redwood City facility indicate that only nickel and lead were present in concentrations which exceeded the limits of the discharge permit.

It should be noted that control survival (80%) failed to meet the minimum requirements of 90% for acceptability of an acute test. However, since there was no apparent toxicity in the 100% effluent sample, it appears that the fish were responding to the control/diluent water.

Data sheets for these bioassay tests are provided in the Appendix to this report.

## **APPENDIX**

### **LABORATORY DATA SHEETS**

## S.R. HANSEN &amp; ASSOCIATES

## ACUTE TEST DATA SHEET

START DATE	3/11/95	TIME	1300	TEST MATERIAL	Cargill Salt Redwood City Crystallizers	DILUENT	AKS + Topic @ 287.
END DATE	3/15/95	TIME	1200	SPECIES/AGE	M. benyline	10 d.o	RENEWAL FREQUENCY @ 48 hr

CONC.	TEMP.	D. O.		pH		COND/SAL	ALK	HARD	NH3	TESTING PARAMETER	PREPARATION
		OLD	NEW	OLD	NEW						
Cont	25		7.5		8.04	28.1				Temp. ✓	TIME: 1315 DATE: 3/11/95 ID: CW
5			7.4		8.10	28.1				D.O. ✓	
10			7.4		8.11	27.9				pH ✓	
25			7.4		8.17	27.9				Cont.	
50			7.1		8.28	28.1				surv. N/A	
100	↓		7.4		8.46	29.0					

Cont.	25	7.5		8.13		28.2				Temp. ✓	TIME: 1415 DATE: 3/12/95 ID: CW
5		7.2		8.16		28.4				D.O. ✓	
10		7.4		8.17		28.7				pH ✓	
25		7.4		8.15		28.9				Cont.	
50		7.0		8.13		29.7				surv. ✓	
100	↓	7.0		8.10		31.0					

Cont	25	7.0	9.2	8.15	7.86	29.4	28.7			Temp. ✓	TIME: 0850-0920 DATE: 3/13/95 ID: CW Δ
5		7.0	9.2	8.17	7.91	29.5	28.7			D.O. ✓	
10		7.1	9.2	8.18	7.96	29.7	28.9			pH ✓	
25		7.2	9.1	8.17	7.97	30.3	29.1			Cont.	
50		7.1	8.8	8.15	8.00	30.9	29.4			surv. ✓	
100	↓	6.9	8.2	8.03	8.09	32.1	30.6				

Cont	25	8.0		8.19		29.6				Temp. ✓	TIME: 0900 DATE: 3/14/95 ID: CW
5		8.0		8.19		29.9				D.O. ✓	
10		7.9		8.20		29.9				pH ✓	
25		7.9		8.20		30.4				Cont.	
50		7.8		8.19		30.5				surv. ✓	
100	↓	7.6		8.11		31.4					

C	25	6.7		8.14		31.				Temp. ✓	TIME: 1200 DATE: 3/15/95 ID: CW
5		6.7		8.17		32.0				D.O. ✓	
10		6.6		8.17		31.3				pH ✓	
25		6.6		8.18		32.2				Cont.	
50		6.5		8.11		32.6				surv. (86%)	
100	↓	6.4		8.00		32.9					

**S.R. HANSEN & ASSOCIATES**

## ACUTE/CHRONIC SURVIVAL DATA SHEET

START DATE 3/11/75 TIME 1300 TEST MATERIAL Redwood City DILUENT AHS + Tropic @ 27%

END DATE 3/15/75 TIME 1200 SPECIES/AGE M. penicillina 10 D RENEWAL FREQUENCY @ 48h

Number of Organisms per rep (on Day 0) = 10

[illegible]



Curtis & Tompkins, Ltd., Analytical Laboratories. Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

ANALYTICAL REPORT

Prepared For:

S. R. Hansen & Associates

4085 Nelson Avenue

Suite 1

Concord, CA 94520

Date: 27-MAR-95

Lab Job Number: 120234

Project ID: N/A

Location: Cargil Salt Co.

Reviewed by:

Reviewed by:

This package may be reproduced only in its entirety.





Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 120234  
 CLIENT: S.R. Hansen & Associates  
 LOCATION: Cargill Salt Co.

DATE SAMPLED: 03/11/95  
 DATE RECEIVED: 03/13/95  
 DATE ANALYZED: 03/14/95  
 DATE REPORTED: 03/27/95

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ANALYSIS: TOTAL DISSOLVED SOLIDS  
 ANALYSIS METHOD: EPA 160.1

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LAB ID	SAMPLE ID	RESULT	UNITS	REPORTING LIMIT
120234-001	R.W.C. CRYSTALLIZER	30,000	mg/L	90

ND = Not detected at or above reporting limit.

QA/QC SUMMARY: Duplicate of 120203-005

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RPD, %	6
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Curts &amp; Tompkins, Ltd.

LABORATORY NUMBER: 120234  
CLIENT: S.R. Hansen & Associates  
LOCATION: Cargill Salt Co.

DATE SAMPLED: 03/11/95  
DATE RECEIVED: 03/13/95  
DATE ANALYZED: 03/13-18/95  
DATE REPORTED: 03/27/95

---

ANALYSIS: BIOCHEMICAL OXYGEN DEMAND  
ANALYSIS METHOD: EPA 405.1

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LAB ID	SAMPLE ID	RESULT	UNITS	REPORTING LIMIT
120234-001	R.W.C. CRYSTALLIZER	ND	mg/L	5.0
METHOD BLANK	N/A	ND	mg/L	5.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY: BS

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RECOVERY, %	189
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Quanterra Incorporated  
880 Riverside Parkway  
West Sacramento, California 95605

916 373-5600 Telephone  
916 372-1059 Fax

March 20, 1995

QUANTERRA PROJECT NUMBER: 080873  
PO/CONTRACT: FRONT

Gary Wortham  
S.R. Hansen & Associates  
4085 Nelson Avenue, Suite I  
Concord, CA 94520

Dear Mr. Wortham:

This report contains the analytical results for the two aqueous samples which were received under chain of custody by Quanterra Environmental Services on 16 March 1995. These samples are associated with your Cargill Salt Company project.

The case narrative is an integral part of this report.

Preliminary results were forwarded via facsimile on 20 March 1995.

If you have any questions, please call me at (916) 374-4357.

Sincerely,



David J. Herbert  
Project Manager

DJH/jas

Enclosures

## **TABLE OF CONTENTS**

### **QUANTERRA PROJECT NUMBER 080873**

Case Narrative

Quanterra's Quality Assurance Program

Sample Description Information

Chain of Custody Documentation

Selected Metals - Various Methods

**Includes Samples: 1, 2**

Sample Data Sheets

Method Blank Report

Laboratory Control Sample Report (DCS)

## **CASE NARRATIVE**

**QUANTERRA PROJECT NUMBER 080873**

There were no anomalies associated with this report.

## QUANTERRA'S QUALITY ASSURANCE PROGRAM

Quanterra has implemented an extensive Quality Assurance (QA) program to ensure the production of scientifically sound, legally defensible data of known documentable quality. A key element of this program is Quanterra's Laboratory Control Sample (LCS) system. Controlling lab operations with LCS (as opposed to matrix spike/matrix spike duplicate samples), allows the lab to differentiate between bias as a result of procedural errors versus bias due to matrix effects. The analyst can then identify and implement the appropriate corrective actions at the bench level, without waiting for extensive senior level review or costly and time-consuming sample re-analyses. The LCS program also provides our client with information to assess batch, and overall laboratory performance.

### Laboratory Control Samples - (LCS)

Laboratory Control Samples (LCS) are well-characterized, laboratory generated samples used to monitor the laboratory's day-to-day performance of routine analytical methods. The results of the LCS are compared to well-defined laboratory acceptance criteria to determine whether the laboratory system is "in control". Three types of LCS are routinely analyzed: Duplicate Control Samples (DCS), Single Control Samples (SCS), and method blanks. Each of these LCS are described below.

**Duplicate Control Samples.** A DCS is a well-characterized matrix (blank water, sand, sodium sulfate or celite) which is spiked with certain target parameters and analyzed at approximately 10% of the sample load in order to establish method-specific control limits.

**Single Control Samples.** An SCS consists of a control matrix that is spiked with surrogate compounds appropriate to the method being used. In cases where no surrogate is available, (e.g. metals or conventional analyses) a single control sample identical to the DCS serves as the control sample. An SCS is prepared for each sample lot. Accuracy is calculated identically to the DCS.

**Method Blank Results.** A method blank is a laboratory-generated sample which assesses the degree to which laboratory operations and procedures cause false-positive analytical results for your samples.

SAMPLE DESCRIPTION INFORMATION  
for  
S.R. Hansen & Associates

Lab ID	Client ID	Matrix	Sampled Date      Time	Received Date
080873-0001-SA		AQUEOUS	15 MAR 95	16 MAR 95
080873-0002-SA		AQUEOUS	15 MAR 95	16 MAR 95

## CHAIN OF CUSTODY RECORD

PROJECT NAME/SITE: <i>Cargill Salt Co</i>					TYPE OF ANALYSIS	PRESERVATIVE/ COMMENTS
SAMPLERS: (SIGNATURE) <i>Ca</i>						
DATE	TIME	COMPOSITE/ GRAB	SITE LOCATION	#/SIZE OF CONTAINERS		
<i>3/9/95</i>	<i>0800</i>		<i>Newark Crystallizer</i>	<i>1x 500 ml</i>	<i>Metals</i>	<i>H<sub>2</sub>O<sub>2</sub></i>
						<i>Please Use</i>
						<i>Quickest Turn</i>
						<i>around time</i>
						<i>Rec'd in good</i>
						<i>condition. 3/16/95</i>

RELINQUISHED BY: <i>[Signature]</i>	RECEIVED BY: <i>[Signature]</i>
DATE & TIME: <i>3/13/95 0830</i>	DATE & TIME: <i>3/16/95 1400</i>
RELINQUISHED BY:	RECEIVED BY: <i>[Signature]</i>
DATE & TIME:	DATE & TIME: <i>3/16/95</i>



## CHAIN OF CUSTODY RECORD

PROJECT NAME/SITE:					TYPE OF ANALYSIS	PRESERVATIVE/ COMMENTS
SAMPLERS: (SIGNATURE)						
DATE	TIME	COMPOSITE/ GRAB	SITE LOCATION	#/SIZE OF CONTAINERS		
3/11/95			Redwood city Crystallizer	1x500	metals	HNO <sub>3</sub>
						Please use
						<u>Quickest</u>
						Turn around
						Time
						Reid in good
						Condition
						3/16/95
RELINQUISHED BY: <i>Angie L. White</i>					RECEIVED BY: <i>[Signature]</i>	
DATE & TIME: 3/13/95 0830					DATE & TIME: 3/16/95 1400	
RELINQUISHED BY:					RECEIVED BY:	
DATE & TIME:					DATE & TIME:	

## *Selected Metals - Various Methods*

METALS

(Water - Total)

Client Name: S.R. Hansen & Associates

Client ID: Redwood City Crystallizer

Lab ID: 080873-0002-SA

Matrix: AQUEOUS

Authorized: 16 MAR 95

Sampled: 15 MAR 95

Prepared: See Below

Received: 16 MAR 95

Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Arsenic	ND	mg/L	0.0040	6020-M	16 MAR 95	17 MAR 95
Cadmium	ND	mg/L	0.0010	6020-M	16 MAR 95	17 MAR 95
Chromium	0.010	mg/L	0.0010	6020-M	16 MAR 95	17 MAR 95
Copper	0.019	mg/L	0.0010	6020-M	16 MAR 95	17 MAR 95
Lead	0.0084	mg/L	0.0010	6020-M	16 MAR 95	17 MAR 95
Mercury	ND	mg/L	0.00020	245.1	16 MAR 95	17 MAR 95
Nickel	0.018	mg/L	0.0010	6020-M	16 MAR 95	17 MAR 95
Silver	ND	mg/L	0.0010	6020-M	16 MAR 95	17 MAR 95
Zinc	0.033	mg/L	0.0020	6020-M	16 MAR 95	17 MAR 95

ND = Not detected

NA = Not applicable

Reported By: John Barnett

Approved By: Lee Mao

The cover letter is an integral part of this report.

Rev 230787

AMENDED

## METALS

(Water - Total)

Client Name: S.R. Hansen &amp; Associates

Client ID:

Lab ID: 080873-0002-SA

Matrix: AQUEOUS

Authorized: 16 MAR 95

Sampled: 15 MAR 95

Prepared: See Below

Received: 16 MAR 95

Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Arsenic	ND	mg/L	0.0040	6020-M	16 MAR 95	17 MAR 95
Cadmium	ND	mg/L	0.0010	6020-M	16 MAR 95	17 MAR 95
Chromium	0.010	mg/L	0.0010	6020-M	16 MAR 95	17 MAR 95
Copper	0.019	mg/L	0.0010	6020-M	16 MAR 95	17 MAR 95
Lead	0.0084	mg/L	0.0010	6020-M	16 MAR 95	17 MAR 95
Mercury	ND	mg/L	0.00020	245.1	16 MAR 95	17 MAR 95
Nickel	0.018	mg/L	0.0010	6020-M	16 MAR 95	17 MAR 95
Silver	ND	mg/L	0.0010	6020-M	16 MAR 95	17 MAR 95
Zinc	0.033	mg/L	0.0020	6020-M	16 MAR 95	17 MAR 95

ND = Not detected

NA = Not applicable

Reported By: John Barnett

Approved By: Lee Mao

The cover letter is an integral part of this report.

Rev 230787

QC LOT ASSIGNMENT REPORT  
Metals Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
080873-0001-SA	AQUEOUS	6020-M-AT	16 MAR 95-T	16 MAR 95-T
080873-0001-SA	AQUEOUS	HG-CVAA-A	16 MAR 95-T	16 MAR 95-T
080873-0002-SA	AQUEOUS	6020-M-AT	16 MAR 95-T	16 MAR 95-T
080873-0002-SA	AQUEOUS	HG-CVAA-A	16 MAR 95-T	16 MAR 95-T

METHOD BLANK REPORT  
Metals Analysis and Preparation  
Project: 080873

Test: 6020-AALIST-AT ICPMS AALIST (As, Pb, Se, Tl, Sb, Cd, Cr, Cu, Ni, Ag, Zn)  
Matrix: AQUEOUS  
QC Lot: 16 MAR 95-T QC Run: 16 MAR 95-T

Analyte	Result	Units	Reporting Limit
Arsenic	ND	mg/L	0.0040
Cadmium	ND	mg/L	0.0010
Chromium	ND	mg/L	0.0010
Copper	ND	mg/L	0.0010
Lead	ND	mg/L	0.0010
Nickel	ND	mg/L	0.0010
Silver	ND	mg/L	0.0010
Zinc	ND	mg/L	0.0020

Test: HG-CVAA-AT Mercury, Cold Vapor AA (Total)  
Matrix: AQUEOUS  
QC Lot: 16 MAR 95-T QC Run: 16 MAR 95-T

Analyte	Result	Units	Reporting Limit
Mercury	ND	mg/L	0.00020

ND = Not Detected

DUPLICATE CONTROL SAMPLE REPORT  
Metals Analysis and Preparation  
Project: 080873

Category: 6020-M-AT Metals by ICPMS  
Matrix: AQUEOUS  
QC Lot: 16 MAR 95-T  
Concentration Units: mg/L

Analyte	Spiked	-----Concentration-----			Accuracy		Precision	
		-----Measured-----			Average(%)		(RPD)	
		DCS1	DCS2	AVG	DCS	Limits	DCS	Limit
Arsenic	0.200	0.178	0.177	0.178	89	80-120	0.5	20
Cadmium	0.200	0.185	0.186	0.186	93	80-120	0.5	20
Chromium	0.200	0.191	0.194	0.192	96	80-120	1.6	20
Copper	0.200	0.185	0.187	0.186	93	80-120	1.1	20
Lead	0.200	0.197	0.196	0.196	98	80-120	0.5	20
Nickel	0.200	0.186	0.187	0.186	93	80-120	0.5	20
Silver	0.200	0.198	0.198	0.198	99	80-120	0.0	20
Zinc	0.200	0.170	0.173	0.172	86	80-120	1.7	20

Category: HG-CVAA-A Mercury by CVAA  
Matrix: AQUEOUS  
QC Lot: 16 MAR 95-T  
Concentration Units: mg/L

Analyte	Spiked	-----Concentration-----			Accuracy		Precision	
		-----Measured-----			Average(%)		(RPD)	
		DCS1	DCS2	AVG	DCS	Limits	DCS	Limit
Mercury	0.0010	0.0010	0.0010	0.0010	107	80-119	0.7	14

Calculations are performed before rounding to avoid round-off errors in calculated result

e. EFFLUENT DATA SUMMARY

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Not Applicable

f. LIST OF APPROVED ANALYSES

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Not Applicable

g. FLOW DATA

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Total Water Discharged	329 acre feet
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